GPS AutoSteer System
Installation Manual

Supported Vehicles

Case Sprayers

SPX-4420

SPX-4430

SPX-3320

SPX-3330

Accuguide Ready

PN: 602-0215-01-A

LEGAL DISCLAIMER

Note: Read and follow ALL instructions in this manual carefully before installing or operating the AutoSteer system.

Note: Take careful note of the safety information in the Safety Information section and throughout this manual.

The manufacturer disclaims any liability for damage or injury that results from failure to follow the instructions and warnings set forth herein.

Please take special note of the following warnings:

1. There is NO obstacle avoidance system included in the manufacturer’s product. Therefore, users must always have an operator on the equipment when the AutoSteer system is in use to look for any obstacles including people, animals, trees, ditches, buildings, etc.
2. During installation of the AutoSteer system and during the Calibration and Tuning processes the vehicle's wheels turn from side to side and the vehicle moves. Be sure that all people and obstacles are clear of the vehicle before installation, calibration and tuning, or use of the AutoSteer system.
3. Use of the AutoSteer system is NOT permitted while the vehicle is on public roads or in public areas. Ensure that the system is OFF before driving on roads or in public areas.

Special Requirements

Tools

This list consists of the tools required to complete the installation. The installer is assumed to have a complete set of common installation tools.

Flat screwdriver	3/8” open wrench	10mm open wrench
#1 Phillips screwdriver	1/2” open wrench	13mm open wrench
#2 Phillips screwdriver	7/16” open wrench	24mm open wrench
#2 Phillips stubby screwdriver	9/16” open wrench	24mm socket and ratchet
Pliers	1/8” Allen wrench	Wire cutter small
10mm socket and ratchet	5/32” Allen wrench	Hack saw
19mm socket and ratchet	Cleaning brush	Cleaning rags
Cable puller pole	10 ft (3 meter) ladder	Tape measure (12ft minimum)

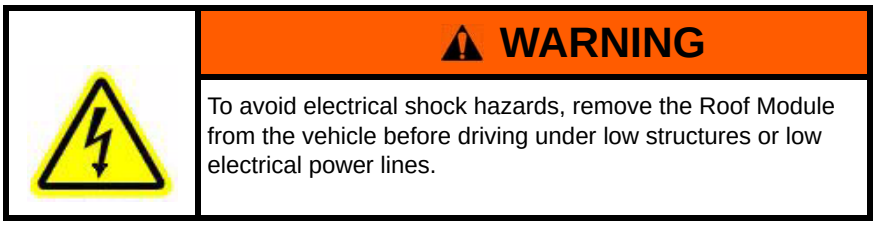
Safety Information

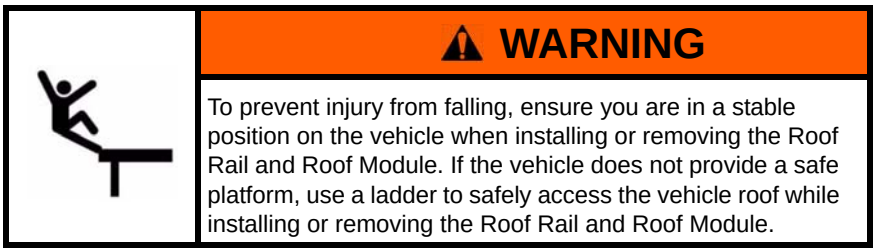
Warning Alerts

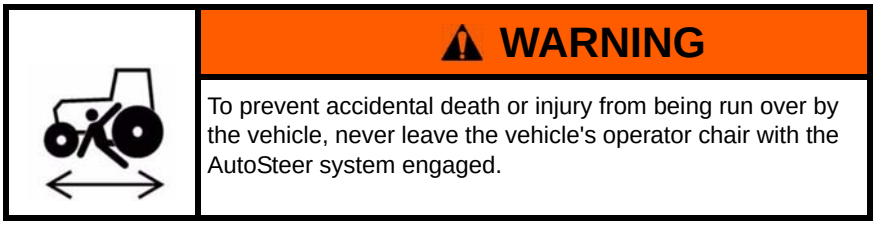
The AutoSteer system installer and manufacturer disclaim any responsibility for damage or physical harm caused by failure to adhere to the following safety requirements:

- As the operator of the vehicle, you are responsible for its safe operation.
- The AutoSteer system is *not* designed to replace the vehicle's operator.

Note: Verify all screws, bolts, nuts, and cable connections are tight after the final installation of the AutoSteer system on the vehicle.


⚠ WARNING
To avoid electrical shock hazards, remove the Roof Module from the vehicle before driving under low structures or low electrical power lines.


⚠ WARNING
To prevent injury from falling, ensure you are in a stable position on the vehicle when installing or removing the Roof Rail and Roof Module. If the vehicle does not provide a safe platform, use a ladder to safely access the vehicle roof while installing or removing the Roof Rail and Roof Module.


⚠ WARNING
To prevent accidental death or injury from being run over by the vehicle, never leave the vehicle's operator chair with the AutoSteer system engaged.

⚠ WARNING

To understand the potential hazards associated with the operation of AutoSteer system equipment read the provided documentation before installing the AutoSteer system on a vehicle.

⚠ WARNING

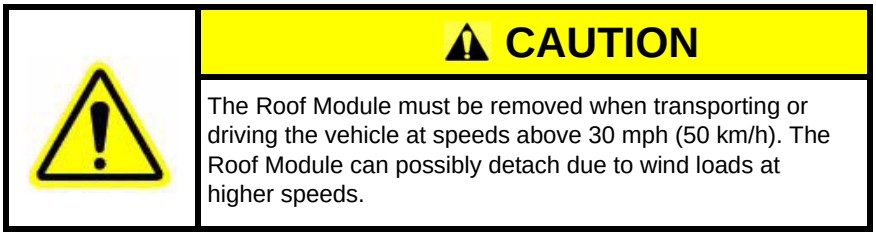
To prevent the accidental engagement of AutoSteer and loss of vehicle control while driving on roads, shut down the AutoSteer system (exit the program). Never drive on roads or in public areas with the AutoSteer system turned on.

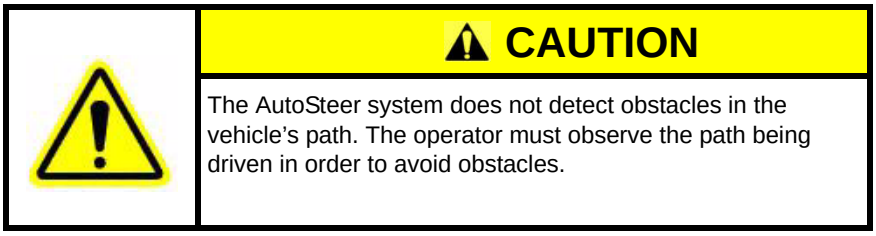
⚠ WARNING

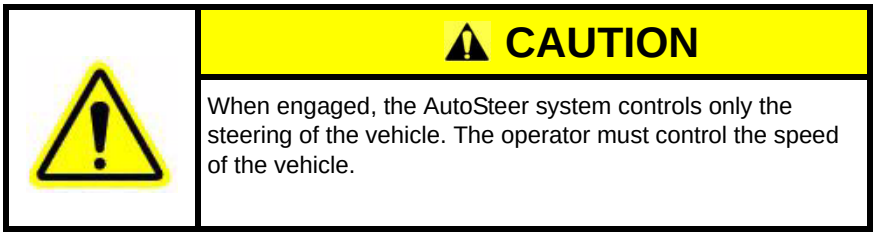
Do not stand close to the wheels and do not move the machine while you are adjusting the Relief Valve. Turn off the engine and engage the parking brake before standing under or next to the machine.

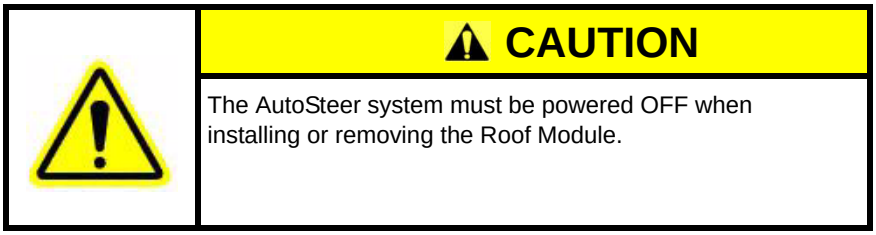
Caution Alerts

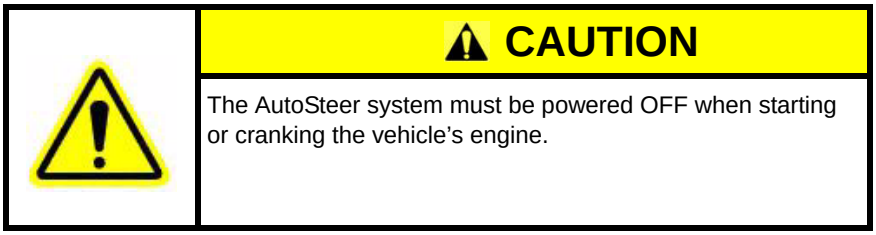
The AutoSteer system installer and manufacturer disclaim any responsibility for damage or physical harm caused by failure to adhere to the following safety requirements:

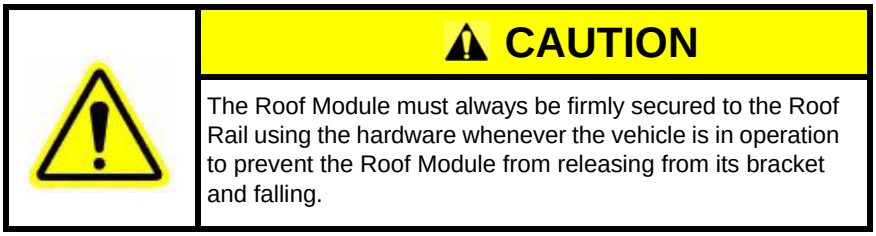

CAUTION
The Roof Module must be removed when transporting or driving the vehicle at speeds above 30 mph (50 km/h). The Roof Module can possibly detach due to wind loads at higher speeds.


CAUTION
The AutoSteer system does not detect obstacles in the vehicle's path. The operator must observe the path being driven in order to avoid obstacles.


CAUTION
When engaged, the AutoSteer system controls only the steering of the vehicle. The operator must control the speed of the vehicle.






CAUTION
The Roof Module must always be firmly secured to the Roof Rail using the hardware whenever the vehicle is in operation to prevent the Roof Module from releasing from its bracket and falling.

Vehicle Requirements

This kit is for installing AutoSteer on Case SPX AccuGuide-ready sprayer models as listed on the front cover. The sprayer must have the factory steering valve already installed. If your sprayer is not AccuGuide-Ready, contact your dealer for the correct installation kit.

The vehicle's steering system and hydraulic system must be in good working order before installing the AutoSteer system. Check for loose or warn parts. Drive the vehicle and confirm that is steers straight and that the wheels can be turned from full left to full right before installing the AutoSteer system. Check for oil leaks in the steering system and hydraulic hoses.

The vehicle's electrical system and battery must be in good working order.We recommend that the vehicle be fully cleaned before installing the AutoSteer system. A clean vehicle will facilitate the installation, cable routing and hose routing, and will also reduce the chance for intoxication from contact or inhalation of chemical residues on the machine. Clean all the attachment points described in this manual and fully clean the machine to remove chemical residues.

Important Information

Note: Verify all screws, bolts, nuts, and cable connections are tight after the final installation of the AutoSteer system on the vehicle.

Technical Support

Refer to your owner's manual for technical support information.

Contact Information

Refer to your owner's manual for contact information.

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Installation Overview

This **Installation Overview** chapter contains part numbers, kit overview diagram, cabling diagram and the installation procedure.

- *Vehicle Inspection*
- *Kit Overview*
  - *Kit Components*
  - *Common Kit Assembly*
- *Installation Procedure Outline*
- *Cable Diagram*

This installation guide describes the installation of the AutoSteer system on several models of Case SPX Accuguide sprayers as listed on the front cover. The AutoSteer installation kit PN: 188-0028-01 is used on this vehicle series. The vehicle specific sub-assemblies for these vehicle series are listed in *Table 1-1*.

Vehicle Inspection

Before installing this steering system, confirm the vehicle steering system is in good working order. Drive the vehicle and verify the vehicle's correct working order. Also, ensure the following system operations and components:

- Check to see if you can turn the steered wheels from lock to lock.
- Ensure the vehicle steers straight.
- Check for loose or worn steering components.
- Ensure the hydraulic fluid level is correct.
- Service the vehicle if the steering is not in good working order.

Kit Overview

This Kit Overview section is divided into sub-sections for each of its assemblies and their components are described in the following sections.

Kit Components

This assembly is shown in *Figure 1-1* and its components are defined in *Table 1-1*.

Figure 1-1 Case Accuguide Puma Kit Components (PN: 188-0028-01)

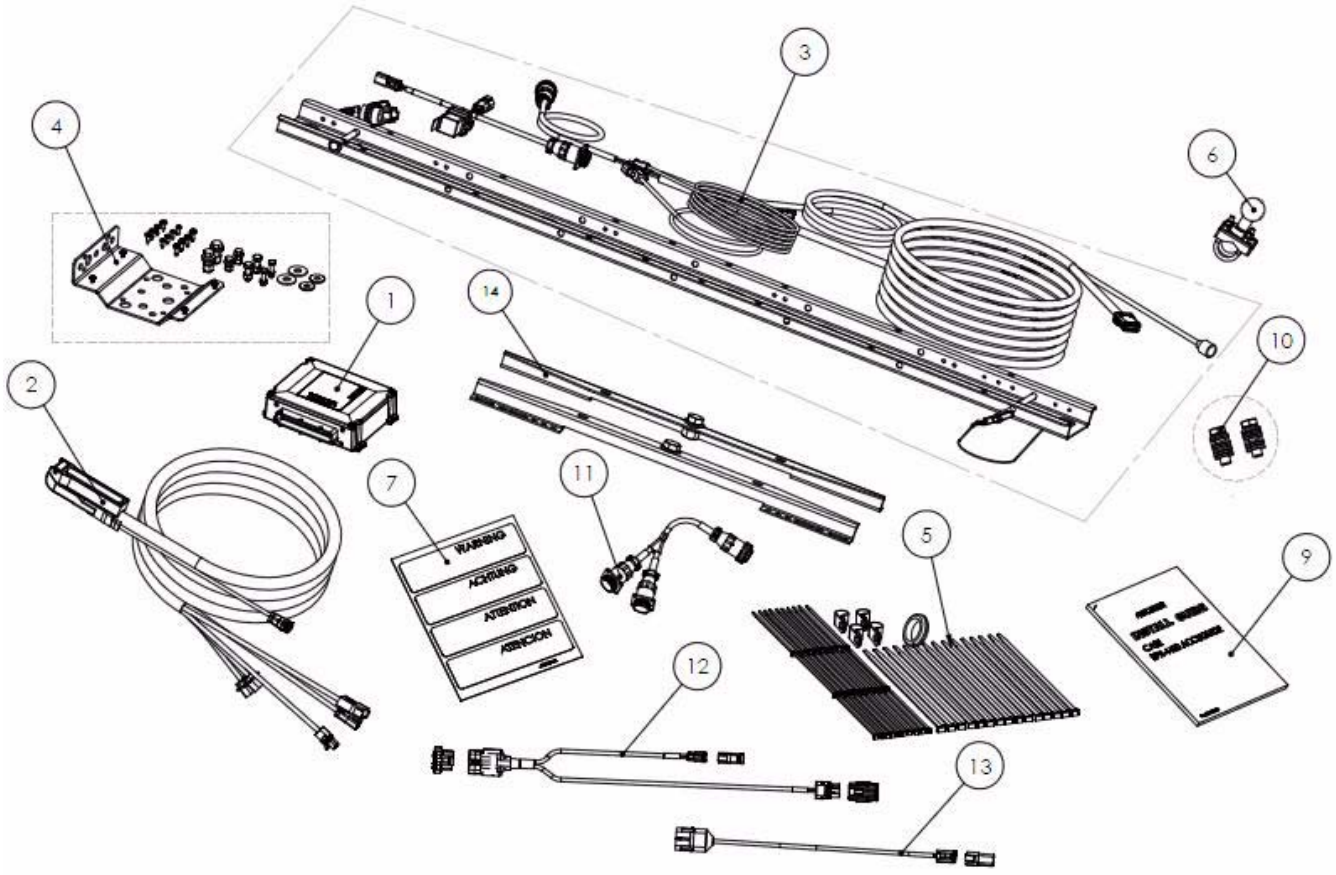


Table 1-1 Installation Kit Components (PN: 188-0028-01)

Item	Component	Part Number
1.	SA Module Assembly	200-0206-01
2.	SA Module Harness	201-0371-02
3.	Common Kit Assembly	200-0497-02
4.	SA Module Bracket	200-0190-01
5.	Mounting Hardware	200-0174-01

Item	Component	Part Number
6.	RAM Mount U-Bolts	207-0010-01
7.	Warning Labels	603-0074-01
9.	Installation Guide	602-0215-01
10.	Roof Bolt Kit	200-0451-01
11.	Power Splitter Cable Harness	201-0024-01
12.	Harness Flow Switch	201-0452-01
13.	Harness Proportional Valve	201-0485-01
14.	Roof Module Bracket	200-0387-01

Common Kit Assembly

This assembly is shown in *Figure 1-2* and its components are defined in *Table 1-2*.

Figure 1-2 Common Kit Components (PN: 200-0497-02)

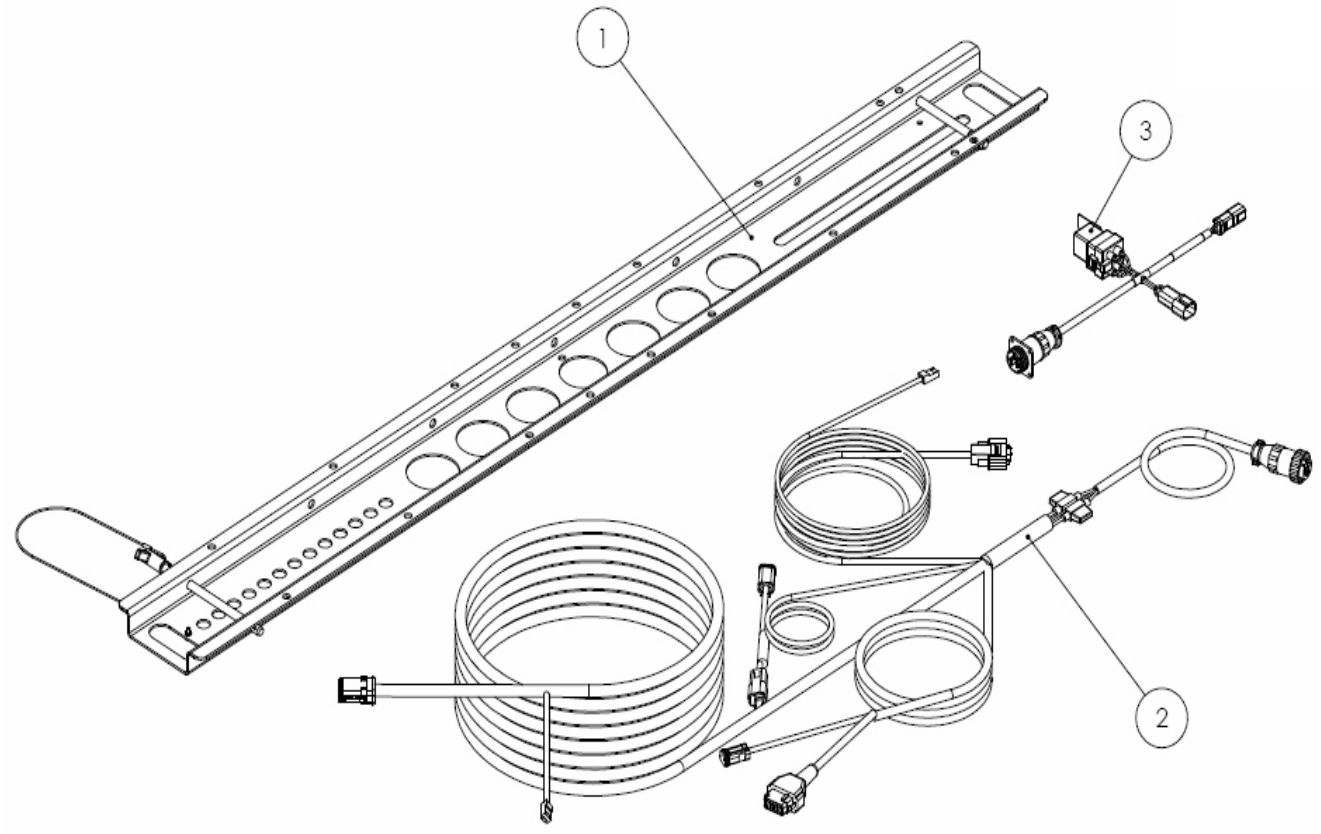


Table 1-2 Common Kit Components (PN: 200-0497-02)

Item	Component	Part Number
1.	Roof Rail Assembly	200-0515-01
2.	Main Cable Harness	202-0426-04
3.	Battery Adapter Power Cable	201-0475-01

Installation Procedure Outline

Note: The system interconnect cable diagram in the *Cable Diagram* on page 6 section of this chapter shows the AutoSteer electrical connections.

1. Verify that all components have been received.

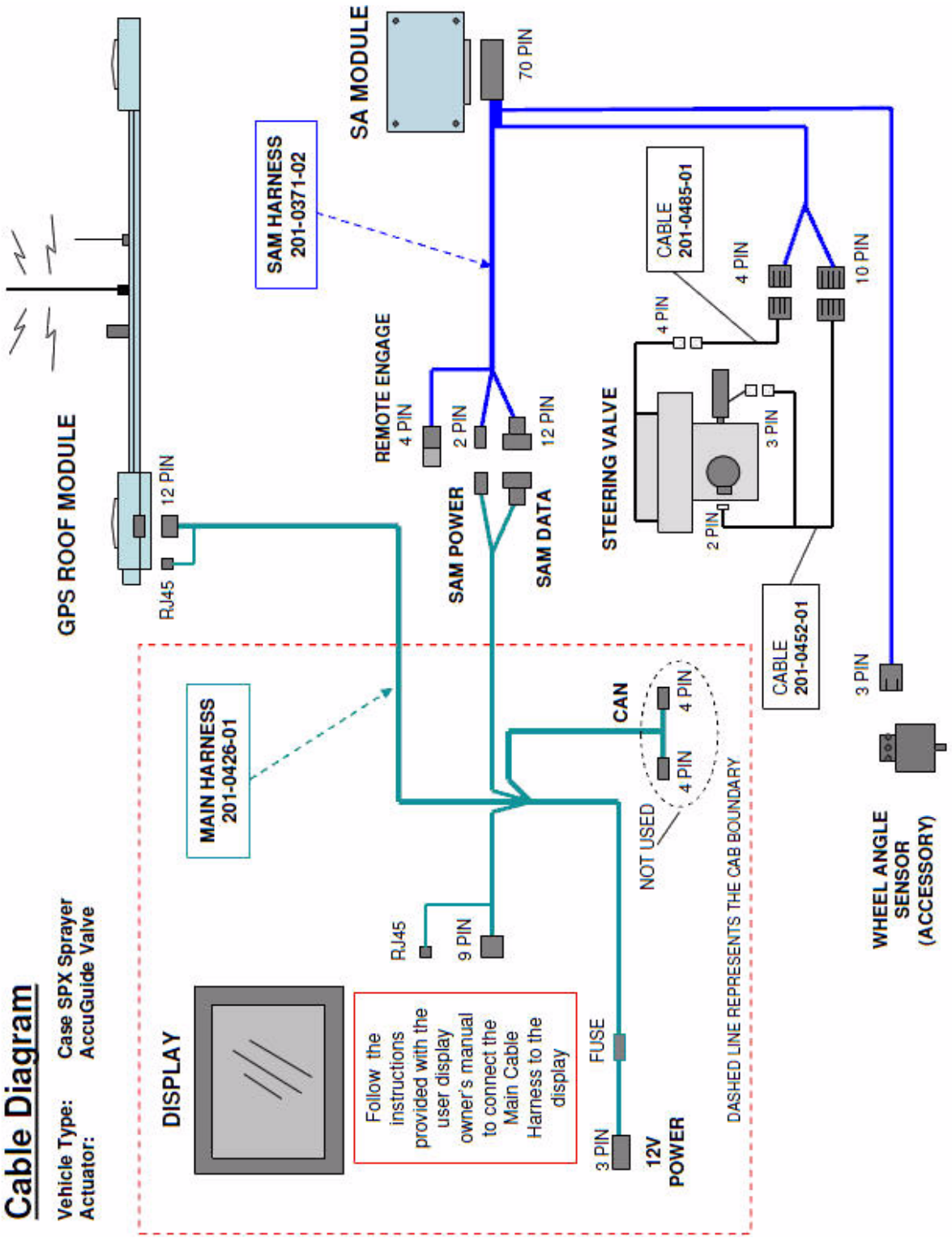
   Note: Step 2, Step 3, and Step 7 are skipped if installing an electric steering actuator.

2. Install the Wheel Angle Sensor. (Optional)
3. Install the SA Module.
4. Install the Roof Rail on the cab roof.
5. Install the Roof Module on the Roof Rail.
6. Install the Display using a RAM Mount Arm.
7. Install the SA Module Harness.
8. Install the Main Cable Harness.
9. Connect the Main Cable Harness to the Display Harness.

   Note: Instructions for connecting the vehicle kit cables to the Display can be found in the Display owner's manual.

10. Verify that all connectors are properly coupled and secured.
11. Power ON the AutoSteer system.
12. Calibrate the vehicle.
13. Tune the vehicle.
14. Verify the system has been installed properly and operates satisfactorily.

Cable Diagram



Wheel Angle Sensor (WAS) Installation

This **Wheel Angle Sensor Installation** chapter information is provided in the following sections:

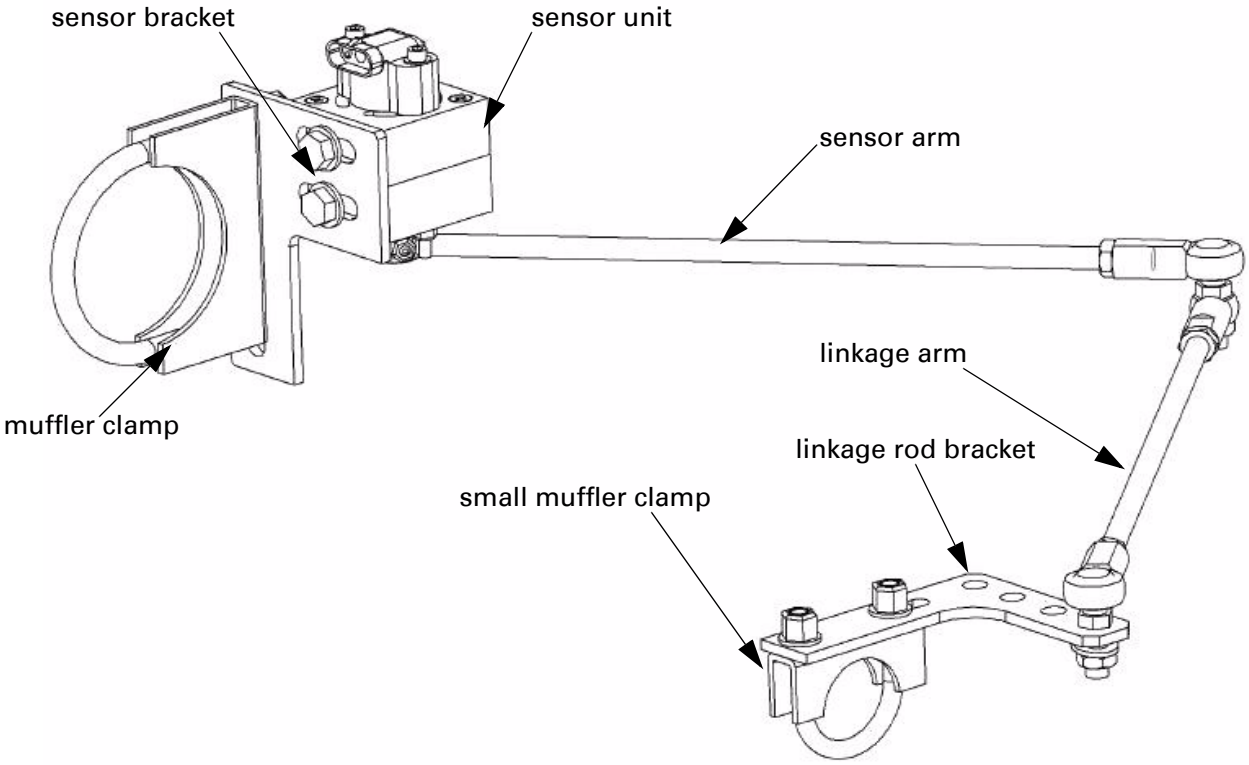
- *Wheel Angle Sensor Overview*
- *Installing Mounting Brackets*
- *Cut the Wheel Angle Sensor Rods to Length*
- *Assemble the Linkage Rod Hardware*
- *Attach the Wheel Angle Sensor Rods to Brackets and Adjust*

Note: The Wheel Angle Sensor is optional equipment and is not provided with the installation kit. The Wheel Angle Sensor installation instructions are provided for special installations, when required.

Wheel Angle Sensor Overview

The Wheel Angle Sensor assembly is shown in *Figure 2-1*:

Figure 2-1 Wheel Angle Sensor

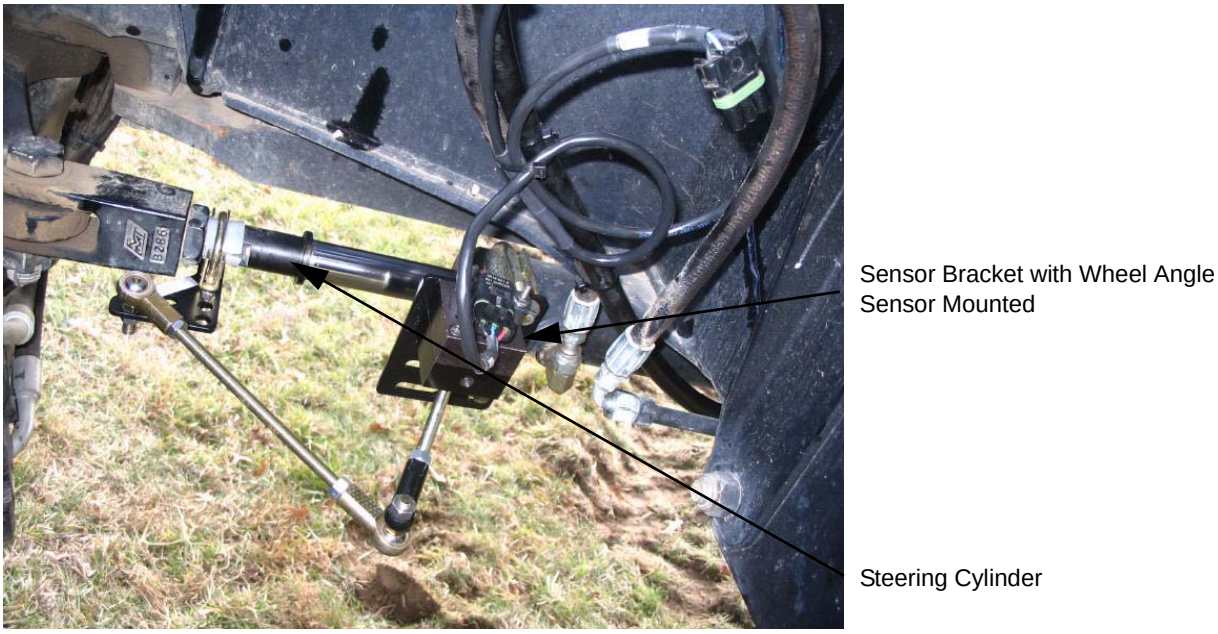


Installing Mounting Brackets

The Wheel Angle Sensor mounts on the vehicle left front axle. The Wheel Angle Sensor bracket mounts on one end of the left side steering cylinder and linkage bracket mounts on the opposite end.

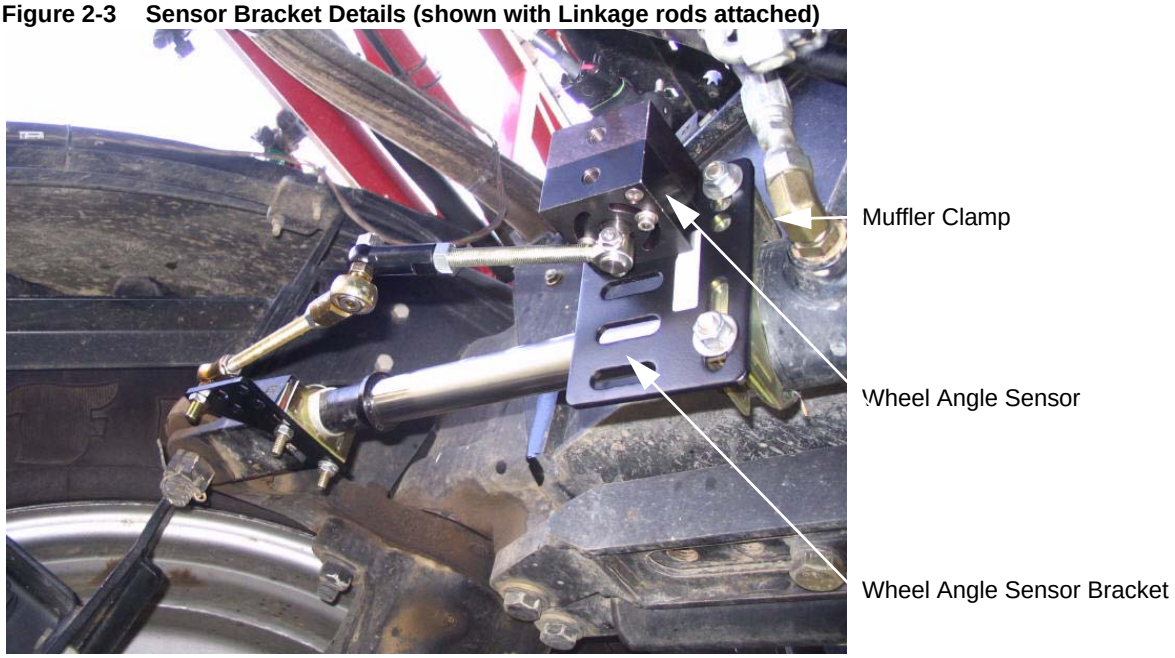
1. Use a muffler clamp to attach the sensor bracket to the steering cylinder. See *Figure 2-2*.

Figure 2-2 Mounting the Sensor Bracket (shown with Linkage rods attached)



Note: *Figure 2-3* shows the sensor bracket and muffler clamp.

Figure 2-3 Sensor Bracket Details (shown with Linkage rods attached)



2. The linkage rod bracket mounts on the other end of the left side steering cylinder.
3. Attach the linkage rod bracket to the steering cylinder using the small muffler clamp. See *Figure 2-4*.

Figure 2-4 Mounting the Linkage Rod Bracket (shown with Linkage rods attached)

Figure 2-5 provides details on the linkage rod bracket and the small muffler clamp.

Figure 2-5 Linkage Rod Bracket Details (shown with Linkage rod attached)

Cut the Wheel Angle Sensor Rods to Length

The Wheel Angle Sensor rods are shipped longer than they need to be. These rods must be cut to the proper length to allow the linkage rods to provide the Wheel Angle Sensor the maximum number of counts as the steering wheel is turned from full right to full left. Due to the variability of the possible mounting positions and axle options, it is left to the installer to verify the correct length for each individual installation and to cut the rods to length. *Table 2-1* provides the typical rod lengths that work for most installations.

Note: Before cutting the linkage rods, verify the wheel angle sensor brackets will attach to the vehicle as shown in this manual and they are attached the correct distance from any reference points shown. If this is not possible, do not cut the rods until it is determined if these lengths will work for your installation. Due to possible variations in the mounting positions, these measurements could be different. These measurements are provided as a reference only. The installer is responsible for ensuring the rods are cut to the proper length.

Use a metal hack saw and vice, as show in *Figure 2-7*, to cut the Wheel Angle Sensor linkage rods to the proper lengths.

Note: It is advisable to attach a nut on the side of the metal rod that is going to be kept in order to clean the threads after the cut has been made.

Protect the threads from damage while cutting the rods. *Figure 2-6* shows where the measurements provided in *Table 2-1* are measured from.

Table 2-1 Linkage Rod Cut Lengths

Item	Length
Rod A	4.5 inches (114mm)
Rod B	7.75 inches (197mm)

Figure 2-6 Linkage Rod Cut Length Measurement Points

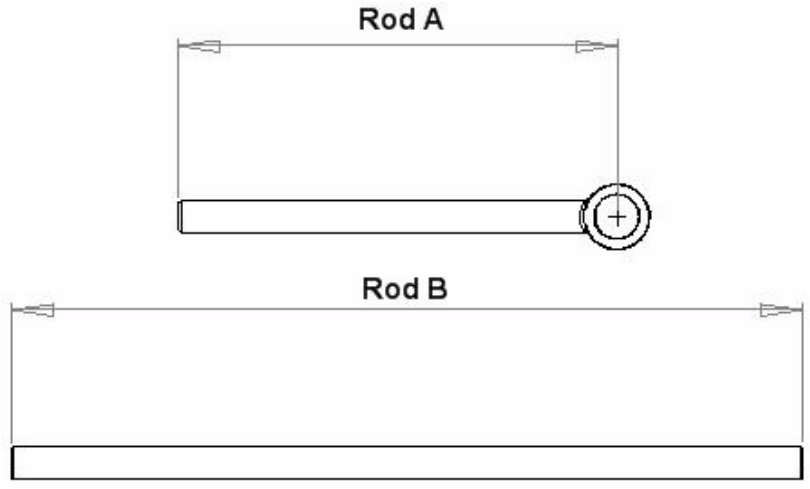
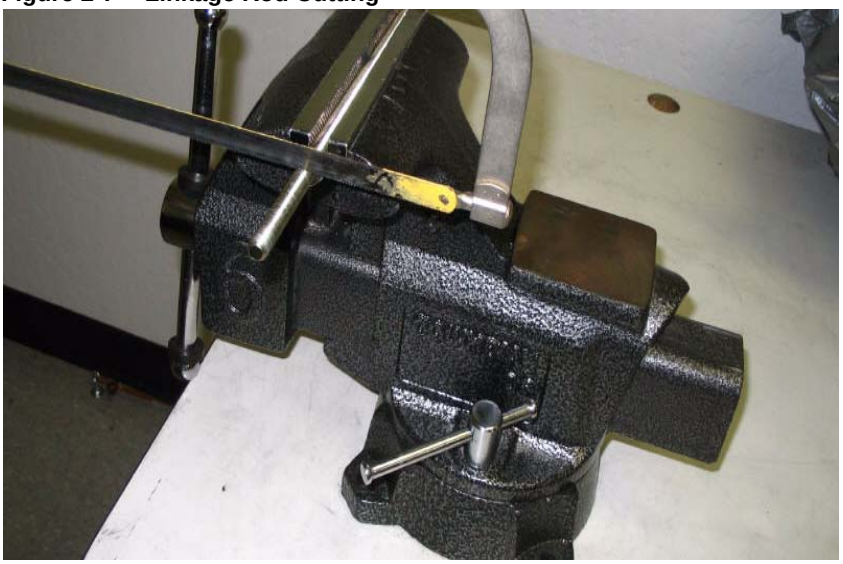


Figure 2-7 Linkage Rod Cutting



Note: The “after-assembly” center-to-center lengths of each linkage rod are shown in *Table 2-2*. *Figure 2-10* shows the measurement points for the assembled linkage rods.

Assemble the Linkage Rod Hardware

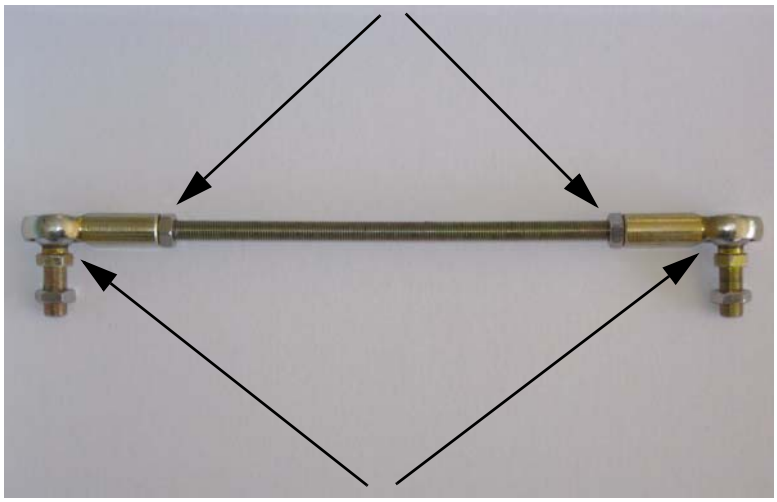
1. Attach a jam nut to the end of Rod A.
2. Connect the eye connector to the end of the Wheel Angle Sensor rod as shown in *Figure 2-8*.

Figure 2-8 Rod A Assembled

3. Attach the jam nuts to each end of the linkage Rod B.
4. Attach the ball joints to both ends of the linkage rod as shown in *Figure 2-9*.

Note: The bolts for the ball joints should be facing the same direction as shown in *Figure 2-9* for this installation.

Figure 2-9 Linkage Rod Assembled



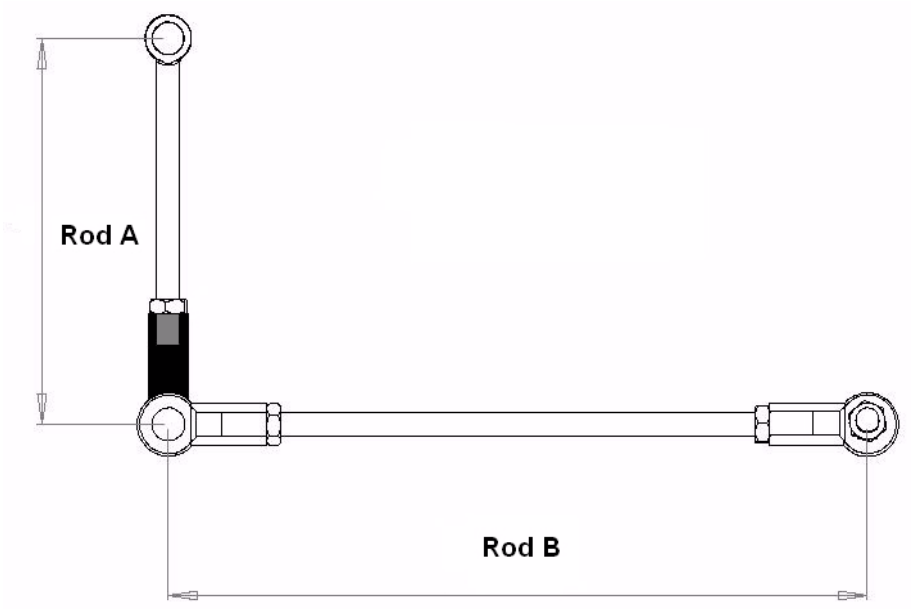
5. For most installations, use *Table 2-2* to adjust the lengths of the rod assemblies to the values shown.

Note: *Figure 2-10* shows where the measurement points for each rod are taken. Due to the variation of axle types and installation points, these measurements are provided as a reference only. Before connecting the steering rods and turning the steering axle verify that these lengths will work and the sensor will not be damaged.

Table 2-2 Assembled Linkage Rod Length

Item	Length
Rod A	5.5 inches (140mm)
Rod B	9.75 inches (248mm)

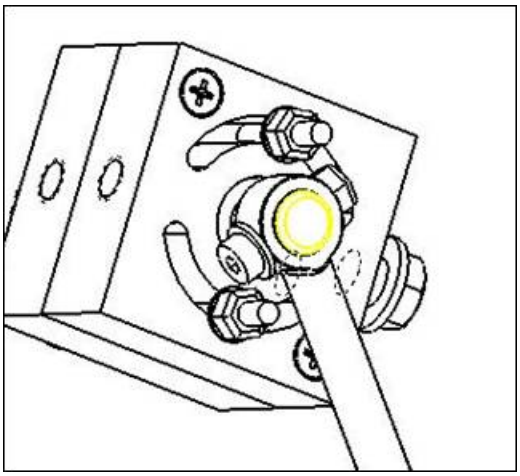
Figure 2-10 Assembled Linkage Rod Measurement Points



Attach the Wheel Angle Sensor Rods to Brackets and Adjust

1. Attach the Wheel Angle Sensor rod to the Wheel Angle Sensor. See *Figure 2-11*.

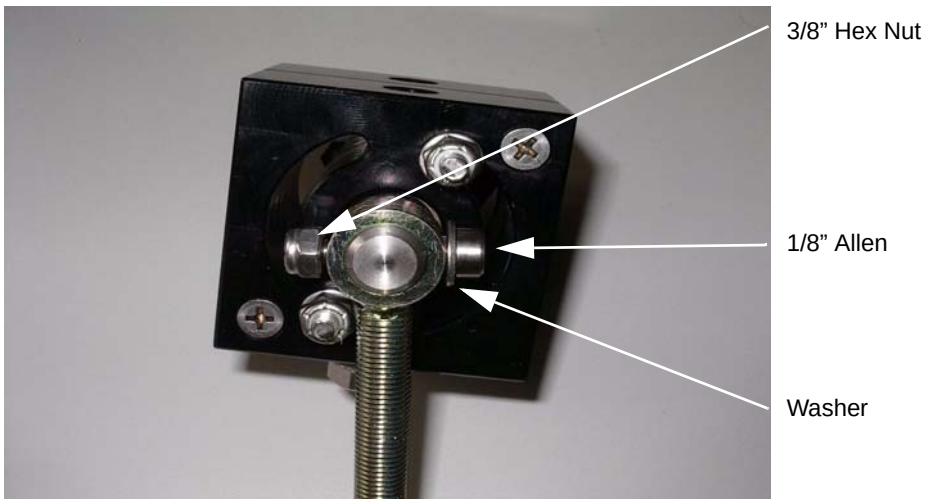
Figure 2-11 Attach Wheel Angle Sensor Rod to Sensor



Note: The flat washer goes on the screw head side and NOT the nut side when attaching the linkage rod. See *Figure 2-12*.

2. Tighten the Wheel Angle Sensor rod with a 3/8” wrench and 1/8” Allen wrench.

Figure 2-12 Place the Washer on Bolt Head Side



3. Attach the linkage rod to the linkage bracket and tighten the ball joint to the bracket with a 1/2” and 9/16” wrench. See *Figure 2-13*.

Figure 2-13 Attach Linkage Rod to Linkage Bracket

⚠ WARNING

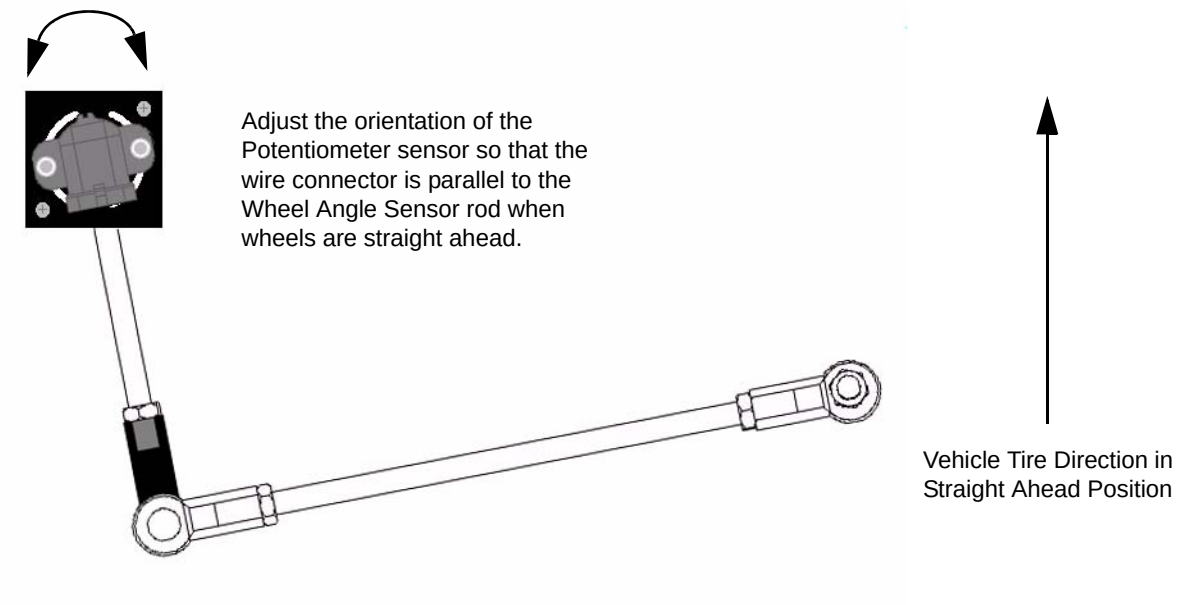
Always shut down the vehicle when working around the steering axle and checking and adjusting the Wheel Angle Sensor rod lengths. The steering axle could move suddenly and cause severe injury or death.

Note: Never attach the linkage rods to Wheel Angle Sensor rod and turn the steering wheels manually or automatically until the fit has been verified. The linkage rods must remain apart while the steering wheels are turned to the maximum right and left positions and then temporarily attached at these positions. Failure to do this may cause the Wheel Angle Sensor or vehicle to become damaged.

Note: After the linkage rods are assembled in the following steps, they should move freely without touching any other parts and without overextending. Make any necessary adjustments to the linkage rods if there is an interference problem.

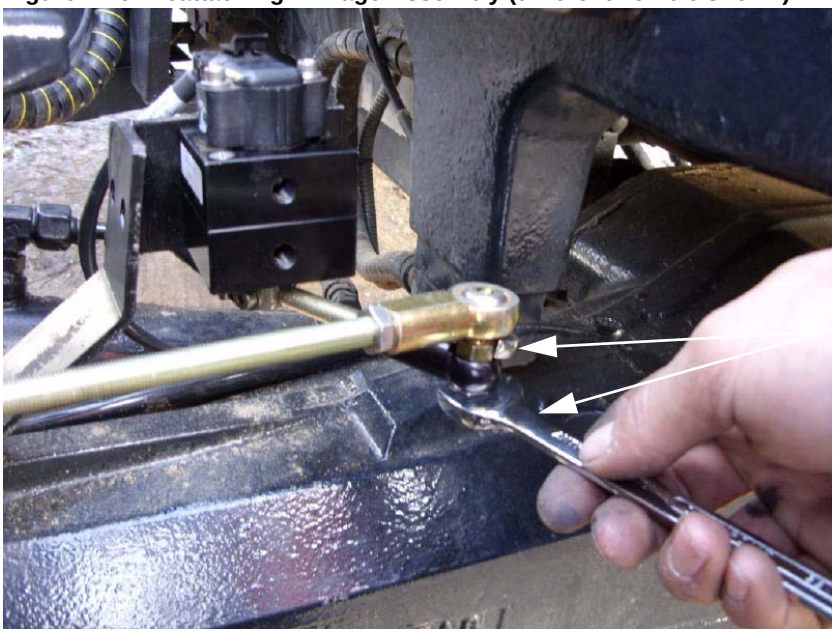
4. With the linkage rods disconnected, manually turn the steering wheel so that the wheels are centered (the vehicle will travel straight ahead when moving).
5. Temporarily attach the linkage rods.
6. Rotate the Wheel Angle Sensor potentiometer on top of the mounting block so that the plastic wire connector is parallel to the Wheel Angle Sensor rod. See *Figure 2-14*.

Figure 2-14 Adjust Potentiometer Angle to Match Straight Ahead


Adjust the orientation of the Potentiometer sensor so that the wire connector is parallel to the Wheel Angle Sensor rod when wheels are straight ahead.
Vehicle Tire Direction in Straight Ahead Position

7. After the potentiometer has been adjusted, tighten the potentiometer bolts with a 3/8” wrench and 5/32” Allen wrench.
8. Disconnect the linkage rods and turn the steering wheel manually to the full left position.
9. Reattach the linkage assembly and verify that the sensor or rods will not be damaged. Adjust the rod lengths as necessary. See *Figure 2-15*.

Figure 2-15 Reattaching Linkage Assembly (different vehicle shown)

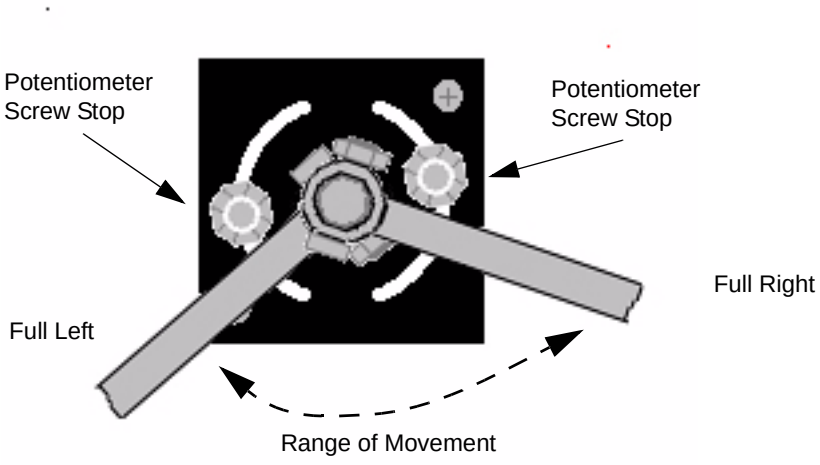


10. Repeat Step 4 through Step 9 until the rod lengths have been adjusted and the potentiometer is centered to get the maximum sensor movement.

Note: The maximum movement is reached when the Wheel Angle Sensor rod will sweep from approximately 3/16 inch (5mm) from both bolt heads holding the potentiometer on to the block when the wheels are turned to the maximum right and left positions. See *Figure 2-16*.

Figure 2-16 Maximum Sensor Movement

Wheel Angle Sensor as Seen from the Bottom



Note: An Ohm meter can also be used to determine if there is enough sensor movement. Connect the Ohm meter to pins A and B of the Wheel Angle Sensor. Measure the Ohm reading at the maximum left and right position. After subtracting the smaller number from the larger number, there should be at least a 3.75 kilohms change. The reading should also never go below 1.6 or higher than 6.6 kilohms as this is reaching the limits of the potentiometer and could damage the sensor.

11. Once all the adjustments are complete, tighten all lock nuts and bolts on the linkage and Wheel Angle Sensor rod. A 1/2” and two 9/16” wrenches are required to tighten all the connections.

SA Module Installation

The **SA Module Installation** chapter contains information in the following sections:

- *SA Module Mounting Orientation*
- *Mount the SA Module*

SA Module Mounting Orientation

Note: The recommended SA Module mounting orientations are shown in *Figure 3-1*. The incorrect SA Module mounting orientations are shown in *Figure 3-2*.

Figure 3-1 Recommended SA Module Orientation

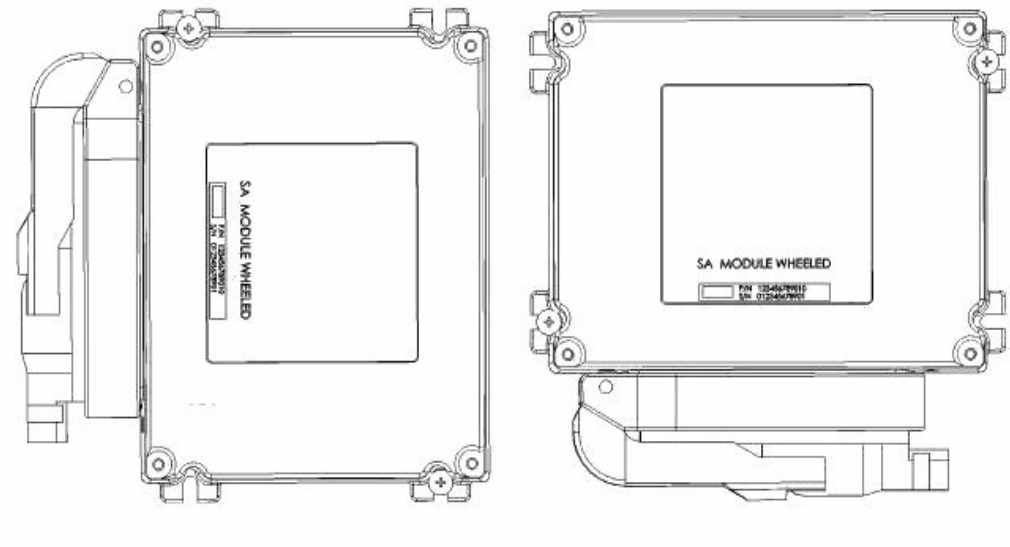
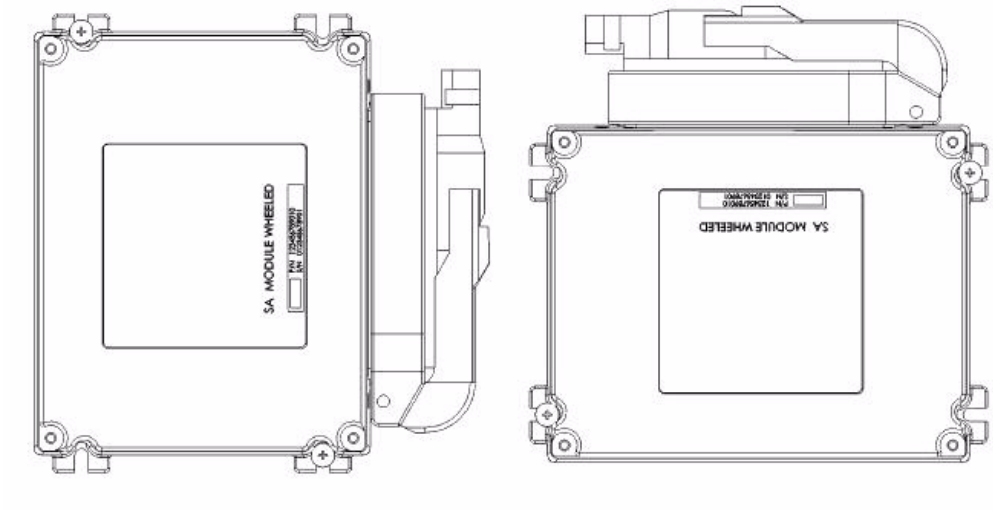


Figure 3-2 Incorrect SA Module Orientation



Mount the SA Module

Due to the variety of options available on vehicles and the possible configuration differences, it may be necessary to install the SA Module in a location other than the example shown here. If an alternative location is required, choose a location where the SA Module can be protected from damage, from moving parts or crop debris, and excessive moisture from weather and cleaning equipment.

1. Install the SA Module bracket on top of a frame cross member under the sprayer. See *Figure 3-3*.

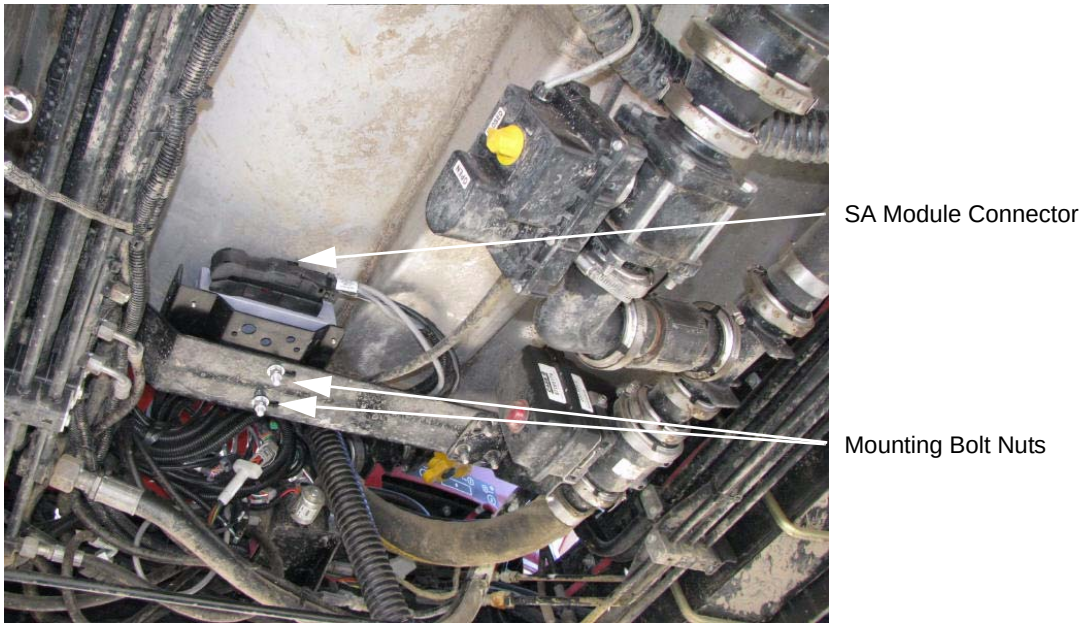
Note: Installing the SA Module on the SA Module bracket before installing the bracket will make the installation process easier.

Figure 3-3 SA Module and Bracket Mounted

2. Secure the SA Module bracket using two hex bolts and nuts. See *Figure 3-4*.

Note: The SA Module connector must face towards the back of the sprayer.

Figure 3-4 SA Module Installed (shown with SA Module Connector)



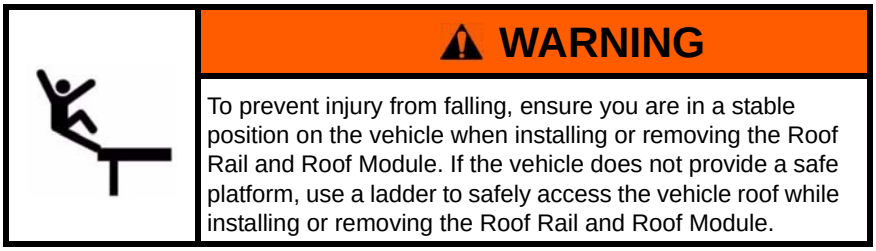
Roof Module Installation

This **Roof Module Installation** chapter contains information in the following sections:

- *Safety Notes*
- *Identifying Cab Type*
- *SPX-4420 and SPX-4430 Installation Procedure*
- *SPX-3320 and SPX-3330 Installation Procedure*

Safety Notes

- The AutoSteer system must be powered OFF when installing or removing the Roof Module.
- The Roof Module must always be firmly secured to the Roof Rail using the hardware whenever the vehicle is in operation to prevent the Roof Module from releasing from its bracket and falling.
- The Roof Module must be removed when transporting the vehicle at speeds above 30 mph (48 km/h).
- Ensure you are in a stable position on the vehicle or ladder when removing the Roof Module, so that you do not fall or drop the Roof Module.


⚠ WARNING
To prevent injury from falling, ensure you are in a stable position on the vehicle when installing or removing the Roof Rail and Roof Module. If the vehicle does not provide a safe platform, use a ladder to safely access the vehicle roof while installing or removing the Roof Rail and Roof Module.

Identifying Cab Type

Case SPX-3330/4410/4420 sprayers can be equipped with both Surveyor cab SPX-4410 and SPX-4420 or SPX-3330 cab. To identify the type of cab your vehicle is equipped with refer to *Figure 4-1*.

Figure 4-1 Surveyor Cab

Note: The Surveyor cab has a curved front window and no corner posts in the front corners. The Surveyor cab is used on the SPX-4420 and 4430.

Figure 4-2 SPX-3330 Cab

Note: The SPX-3330 cab has a flat windscreen and a corner post in the front corners. The SPX-3330 cab is used on the SPX-3330 and 3330.

SPX-4420 and SPX-4430 Installation Procedure

1. Identify the two large hex bolts towards the back of the cab roof. See *Figure 4-3*.

   Note: These bolts are used to secure the roof rail.

2. Remove the two hex bolts.

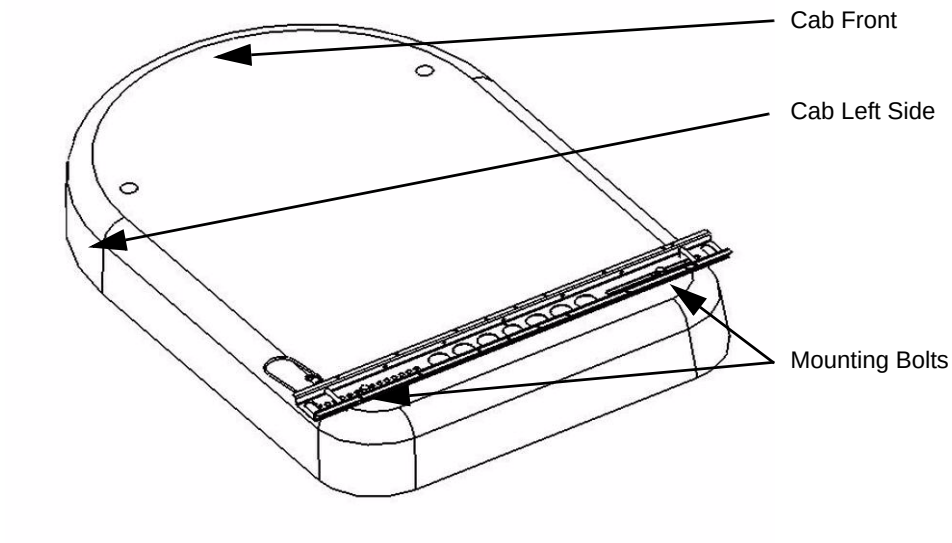
Figure 4-3 Mounting Bolt Locations

3. Install the Roof Rail over the cab and secure using the two longer bolts and spacer washers provide in the kit.
4. Insert flat spacer washers as necessary to elevate the rail above the roof with a small clearance.

   Note: The Roof Rail end with the quick release pin must be on the roof left side.

5. Secure the Roof Rail using the bolts and washers supplied. Tighten using a 24mm socket and ratchet. See *Figure 4-4*.

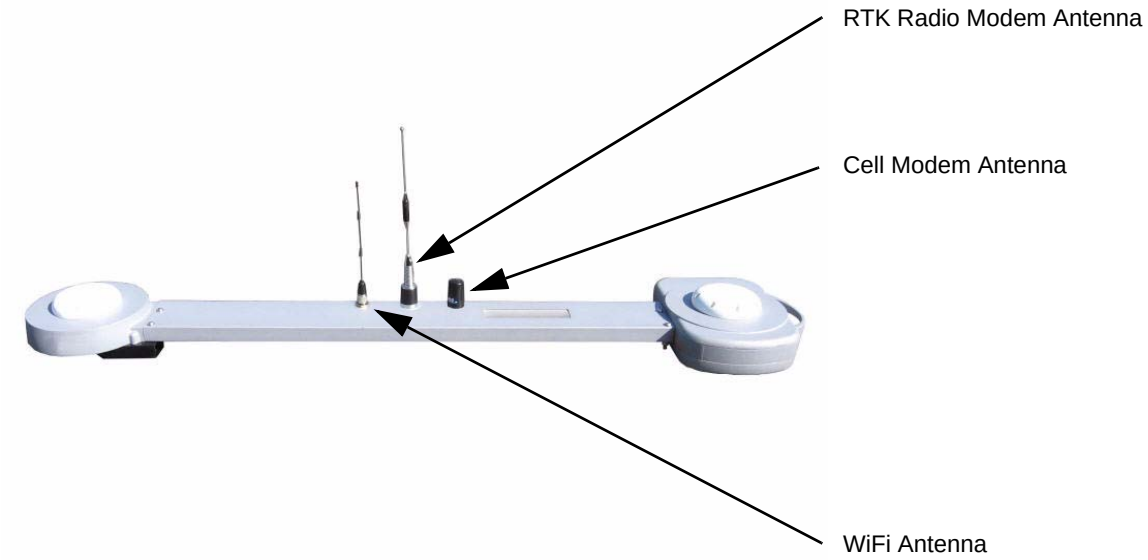
Figure 4-4 Attach the Roof Rail



6. Attach the three antennas to the proper Roof Module antenna connections. See *Figure 4-5*.

Note: Hand tighten the connections. Do not over tighten.

Figure 4-5 Antennas Attached to the Roof Module



7. Remove the Locking Pin from the Roof Rail. See *Figure 4-6*.

Note: Press the button on the end of the handle to allow the pin to be removed.

Figure 4-6 Remove Locking Pin

8. Place the Roof Module on the Roof Rail. See *Figure 4-7*.

Figure 4-7 Attach Roof Module (shown with Main Cable Harness attached)

9. Reinsert the Locking Pin into the Roof Rail. See *Figure 4-8*.

Figure 4-8 Reinsert Locking Pin

Note: Ensure the Roof Module is secured to the Roof Rail and that the Locking Pin is fully engaged across the Roof Rail. The Locking Pin can be inserted from either side of the Roof Rail. The Locking Pin can be inserted from either side of the Roof Rail.

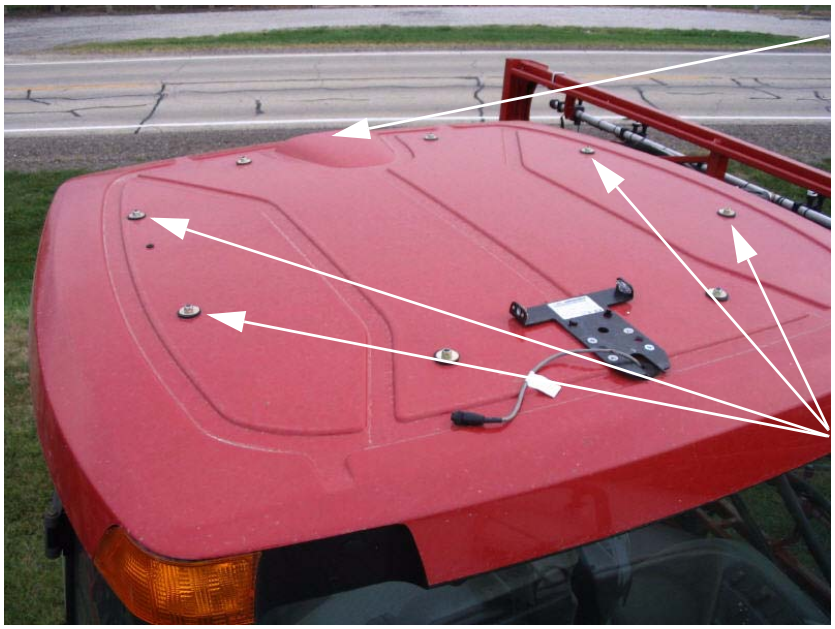
10. The completed Roof Module should appear as shown in *Figure 4-9*.

Figure 4-9 Completed Roof Module Installation (shown with Main Cable Harness attached)

SPX-3320 and SPX-3330 Installation Procedure

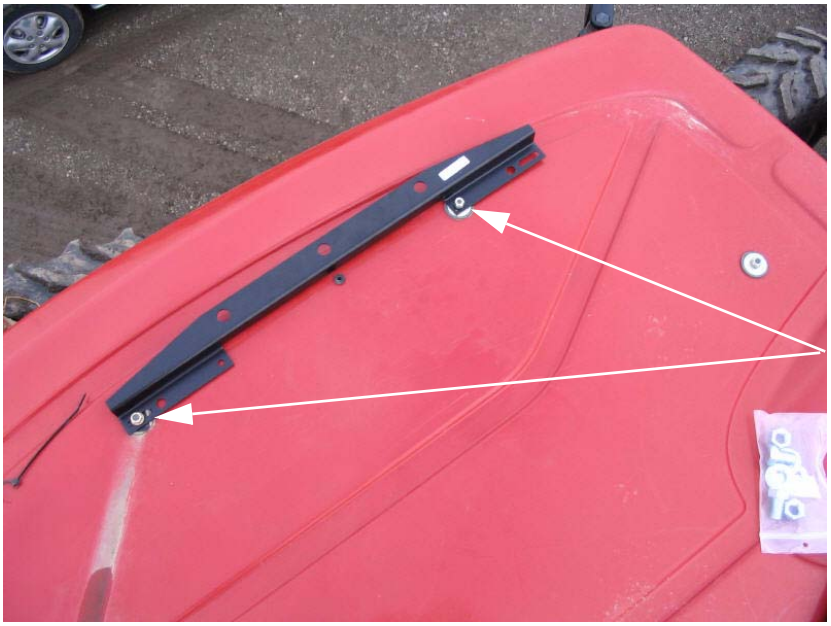
1. Identify the two small hex nuts along the right and left sides of the cab roof.

Figure 4-10 Mounting Bolt Location



2. Install a roof bracket on the left side of the cab roof and secure using the two existing nuts.
3. Repeat on the right side. Install a bracket on the right side and secure using the two existing nuts.

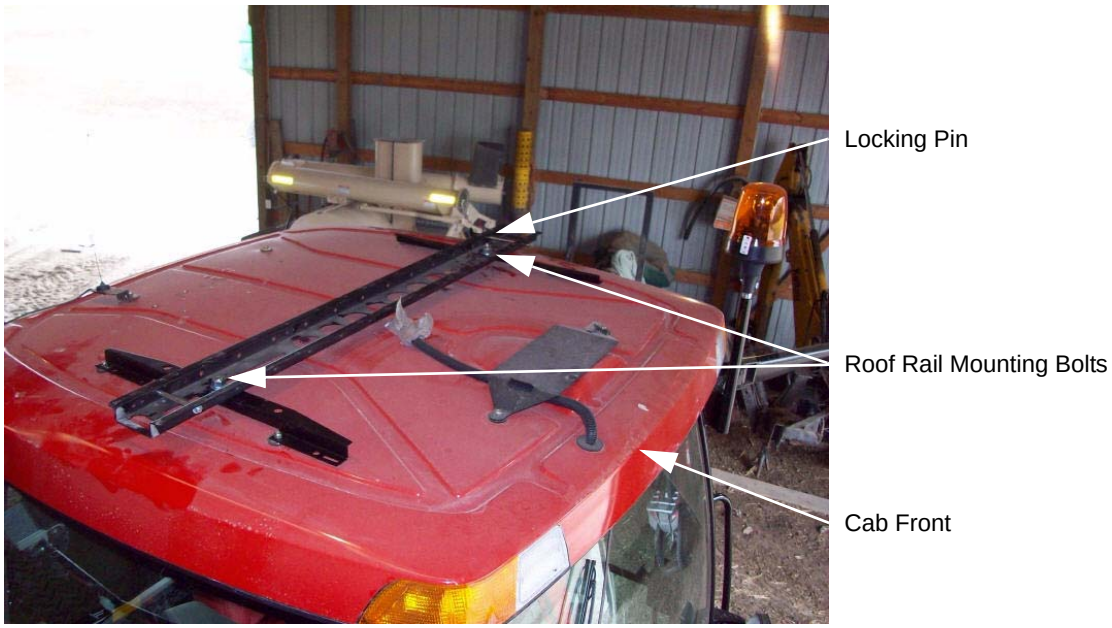
Figure 4-11 Roof Module Bracket Installed



4. Install the roof rail over the two roof brackets with the quick release pin on the left side of the vehicle.
5. Secure the Roof Rail to the brackets using one large hex bolt, washers and nut on each side.

Note: Ensure the Roof Rail is mounted perpendicular to the direction of travel and centered over the cab roof.

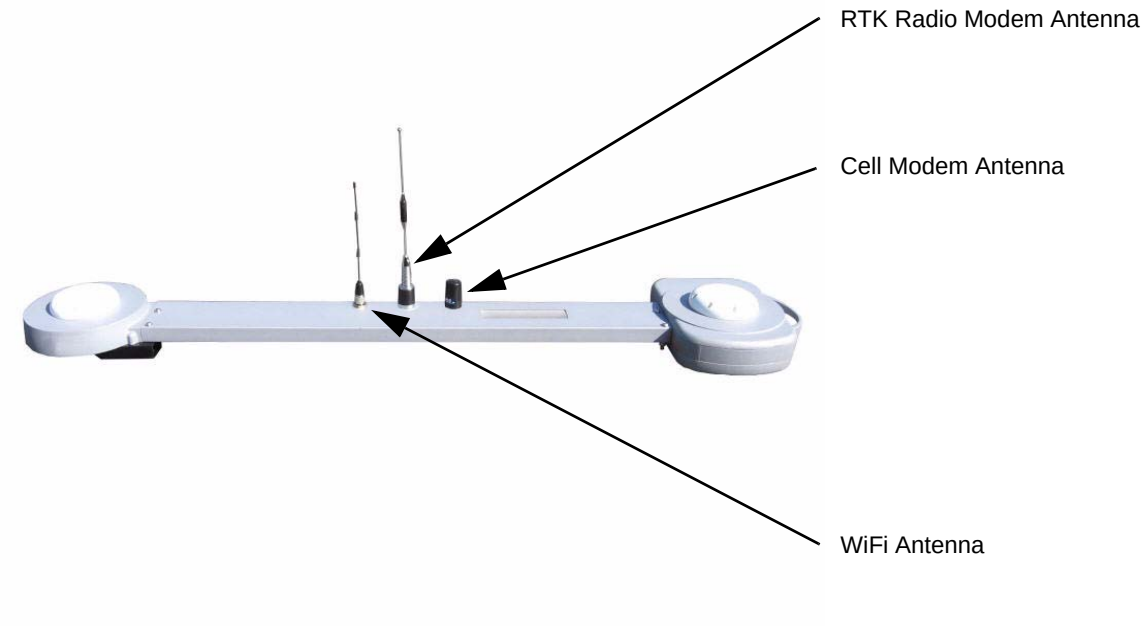
Figure 4-12 Roof Rail Mounted on Brackets



6. Attach the three antennas to the proper Roof Module antenna connections. See *Figure 4-13*.

Note: Hand tighten the connections. Do not over tighten.

Figure 4-13 Antennas Attached to the Roof Module



7. Slide the Roof Module onto the rail with the Roof Module handle on the vehicle left side. See *Figure 4-14*.

Figure 4-14 Roof Module Mounted on Roof Rail

8. Reinsert the Locking Pin into the Roof Rail. See *Figure 4-15*.

Note: Ensure the Roof Module is secured to the Roof Rail and that the Locking Pin is fully engaged across the Roof Rail. The Locking Pin can be inserted from either side of the Roof Rail. The Locking Pin can be inserted from either side of the Roof Rail.

Figure 4-15 Reinsert Locking Pin

9. The completed Roof Module should appear as shown in *Figure 4-16*.

Figure 4-16 Completed Roof Module Installation

Display Installation

This **Display Installation** chapter contains information for installing and adjusting the Display in the following sections:

- *Introduction*
- *Installation Procedure*

Introduction

This manual provides the instructions for installing the RAM Mount Ball in the cab. Installing the RAM Mount enables the Display to be attached later. Refer to your Display's User Manual for installation instructions.

Installation Procedure

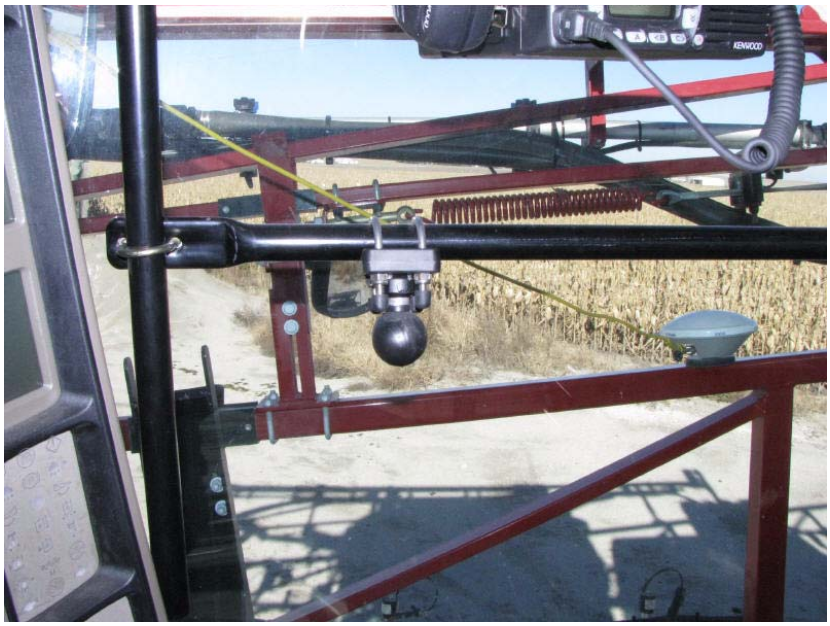
1. Locate the steel bars on the right side of the cab. See *Figure 5-1*.

Note: The exact configuration of the bars will depend on the sprayer model. Install the display in a position that is easy to see and touch and that does not obstruct the driver's view of the road or mirrors.

Figure 5-1 Locate the Steer Bar

2. Mount the display RAM base on the steel bar and secure using the two U-Bolts provided. See *Figure 5-2*.

Figure 5-2 RAM Mount Base Installed



Note: Refer to the Display User Manual for the remaining Display specific installation instructions.

Connecting System Cables

This **Connecting System Cables** chapter provides information for connecting the Main Cable Harness and the SA Module Cable Harness to the various vehicle and AutoSteer components in the following sections:

- *SA Module Harness*
  - *SA Module Connection*
  - *Wheel Angle Sensor Connection*
  - *Steering Valve Connection*
- *Main Cable Harness*
  - *Roof Module*
  - *SA Module Harness*
- *Power Supply Connection*
  - *Cab Power Connection*
  - *Battery Power Connection*

SA Module Harness

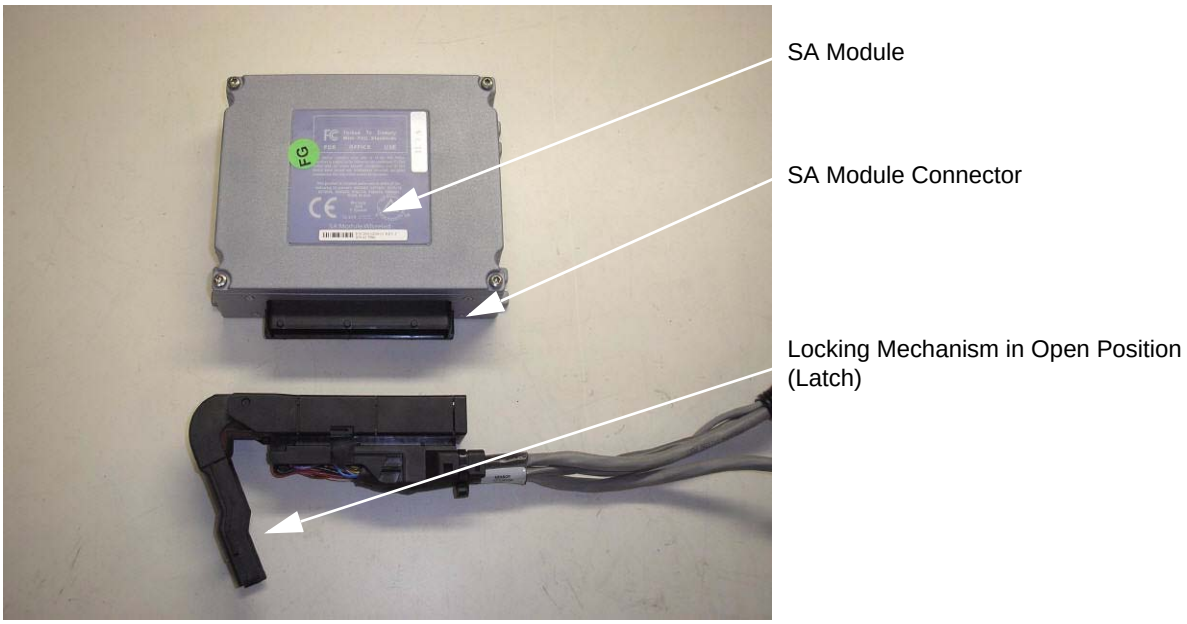
This **SA Module Harness** section contains the following sub-sections:

- *SA Module Connection*
- *Wheel Angle Sensor Connection*
- *Steering Valve Connection*

SA Module Connection

1. Align the SA Module Harness connector to the SA Module. See *Figure 6-1*.
2. Open the connector latch lever. See *Figure 6-1*.

Figure 6-1 Connecting SA Module Connector



3. Press the SA Module Harness connector onto the SA Module connector.

Note: You can damage the connectors if your force them into position. Do not force them together or use tools.

---

4. Press the latch lever closed until it clicks and locks the connector. See *Figure 6-2*.

Figure 6-2 Closing the SA Module Connector

Note: If you need to disconnect the SA Module connector, you must open the latch lever before attempting to pull the connectors apart.

5. Close the cable connector locking mechanism as shown in *Figure 6-3*.

Figure 6-3 SA Module Connector (closed).

Wheel Angle Sensor Connection

Note: This connection to the Wheel Angle Sensor is only required when using the AutoSteer Wheel Angle Sensor.

1. Route the SA Module Harness 3-pin connector towards the front axle and the Wheel Angle Sensor.

Note: Route the cable in a protected position allowing axle movement and adjustments to the tread width.

2. Connect the cable to the Wheel Angle Sensor. See *Figure 6-4*.

Figure 6-4 Wheel Angle Sensor Connector

3. Secure the Wheel Angle Sensor cable with cable ties.
4. Bundle any excess cable in a protected position and secure with cable ties.

Steering Valve Connection

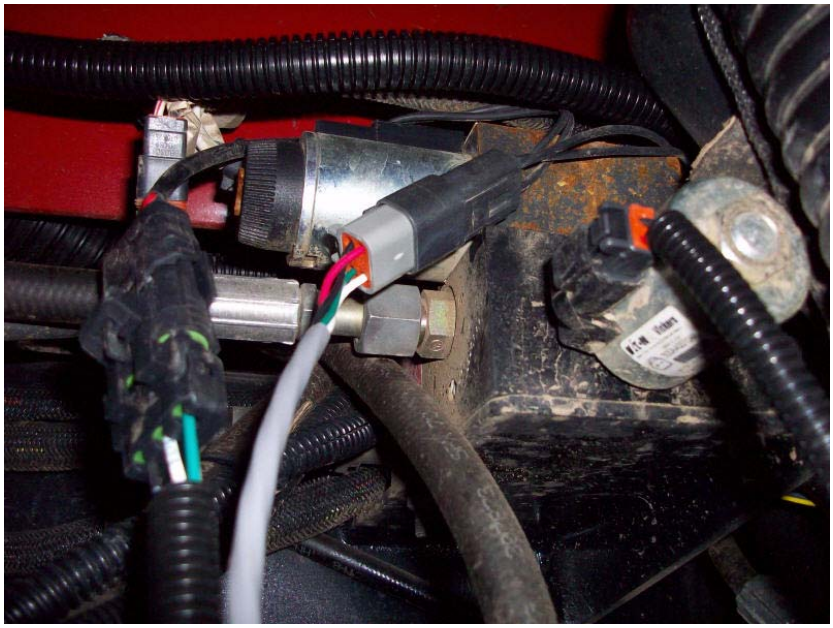
1. Route the two SA Module Harness connectors towards the Steering Valve under the machine.

Note: Two adapter cable provided in the kit are used to connect the SA Module Harness to the factory Steering Valve.

---

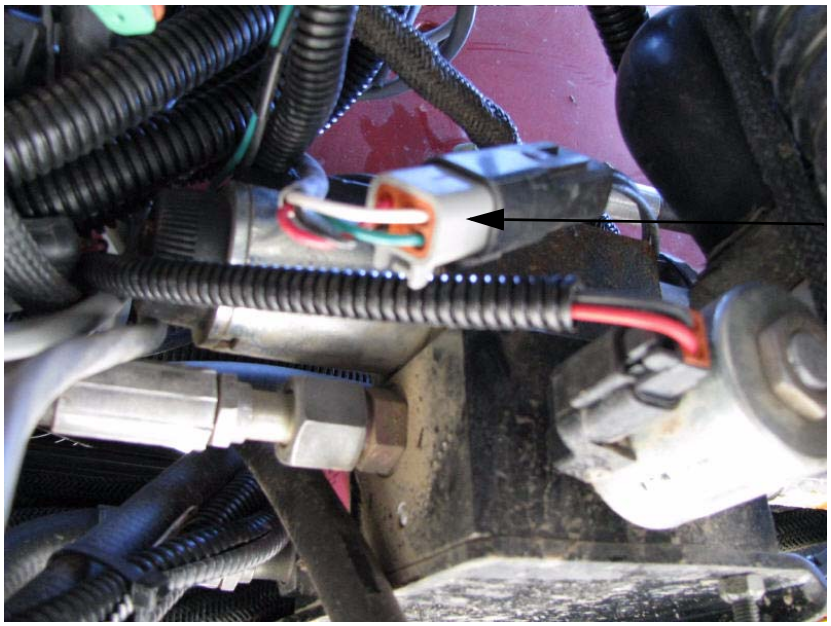
2. Locate the Steering Valve connectors on the SA Module Harness, remove the two end caps, and connect the adapter cables. See *Figure 6-5*.

Figure 6-5 Steering Valve Connectors



3. Use one adapter cable to connect the 4-pin connector on the SAM harness to the 4-pin connector on the Steering Valve that controls Right and Left steering. See *Figure 6-6*.

Figure 6-6 Right and Left Steering Connection

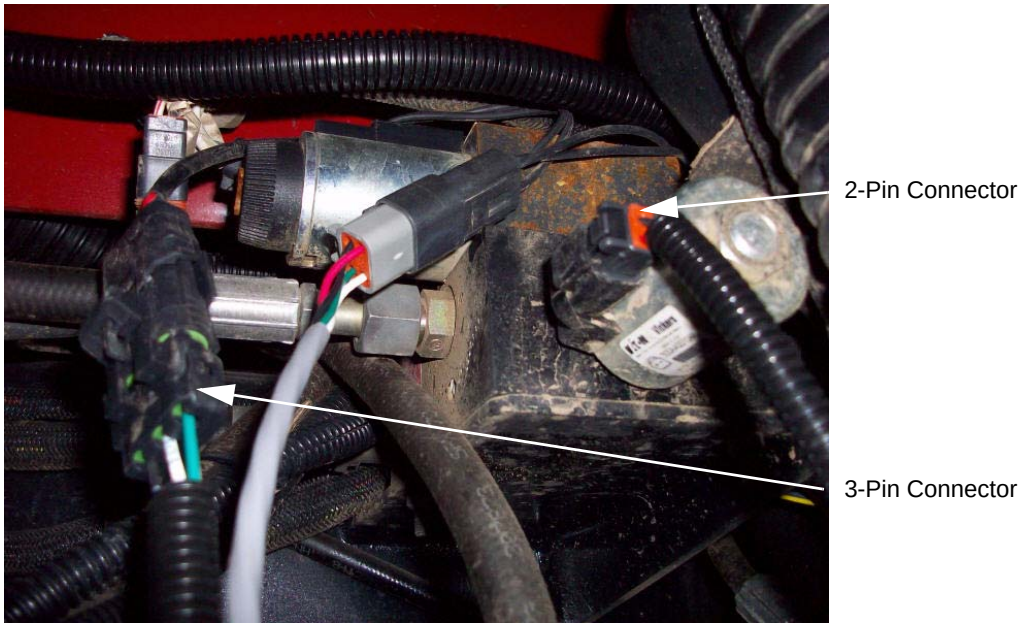


4. Use the second adapter cable to connect the SA Module Harness 10-pin connector to the solenoid valve and flow switch. See *Figure 6-7*.

Note: The 2-pin connector connects to the solenoid that enables AutoSteer mode. The 3-pin connector connects to the flow switch to enable manual kick-out when the driver turns the steering wheel.

Note: Use the connector caps provided with the adapter cables to cover and protect the cable connectors on the machine that were disconnected from the valve.

Figure 6-7 Steering Valve Flow Switch and Solenoid Valve Connectors



5. Secure all excess cables in a protected position using cable ties.
6. This completes the cable connections to the Steering Valve.

Main Cable Harness

This Main Cable Harness section contains the following sub-sections:

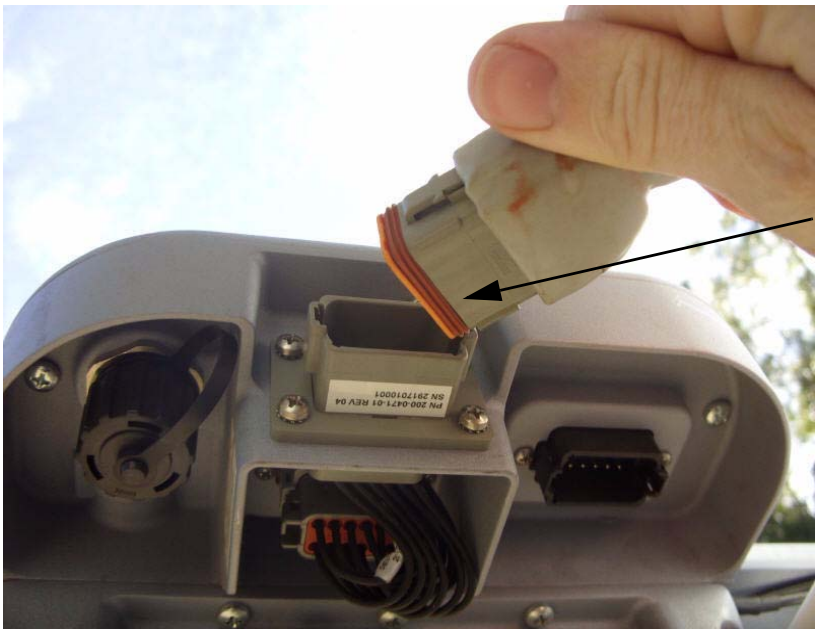
- *Roof Module*
- *SA Module Harness*

Roof Module

7. Connect the Main Harness to the Roof Module connector. See *Figure 6-8*.
8. Orient the 12-pin connector so the word TOP on the cable connector is pointing upwards (towards the sky). See *Figure 6-8*.
9. Insert the cable connector into the Roof Module. Push the connector in until it clicks and locks in place.

Note: To remove the connector, grasp the connector to compress the two side latches and then pull away from the Roof Module.

Figure 6-8 Connecting the Main Harness to Roof Module



10. Orient the Ethernet cable connector with the connector under the receiver so the contacts on the cable connector are pointing towards the back of the vehicle. See *Figure 6-9*.

Note: This orientation is usually towards your right side if you are standing on the vehicle left side and looking towards the Roof Module.

11. Slide the cable connector into the receiver and rotate the plastic bayonet sleeve clockwise to lock the connector. See *Figure 6-9*.

Figure 6-9 Roof Module Ethernet Connection

12. Route the Main Cable Harness down the right side of the cab and towards either the rear window feedthrough or the cab floor feedthrough for access into the cab. See *Figure 6-10* and *Figure 6-11* to identify the appropriate method for your vehicle.

Note: The two cab styles for this series of Case Sprayers use different methods for routing the Main Cable Harness into the cab. *Figure 6-10* shows the Main Cable Harness entry method for the SPX-4420 and 4430 sprayers. *Figure 6-11* shows the Main Cable Harness entry method for the SPX-3320 and SPX-3330 sprayers.

Note: This may require cutting a slot in the cab floor feedthrough rubber grommet or knocking out a feedthrough plug under the rear window to enable the wires to pass into the cab.

Figure 6-10 Routing the Cable into the Cab (SPX-4420 and 4430 cabs)

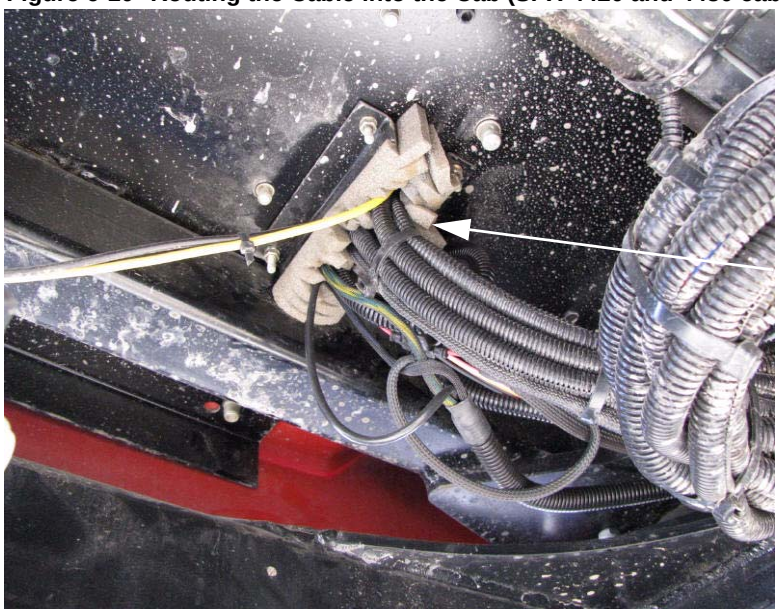
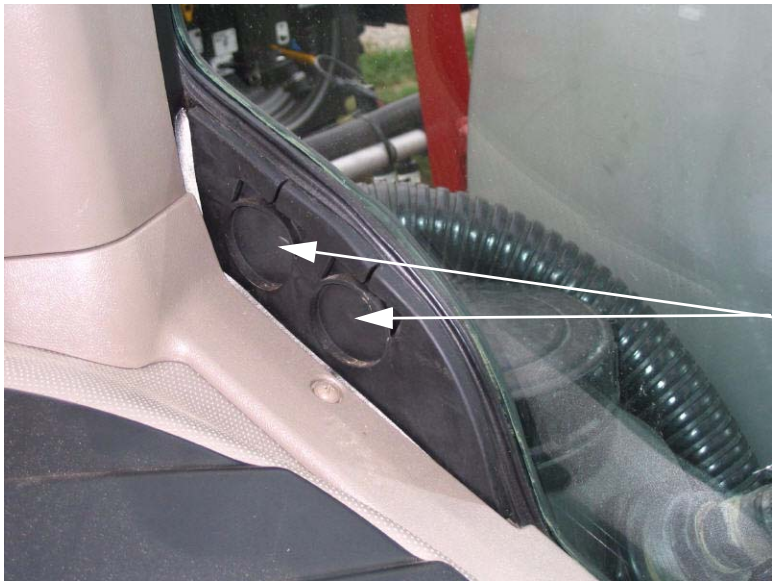


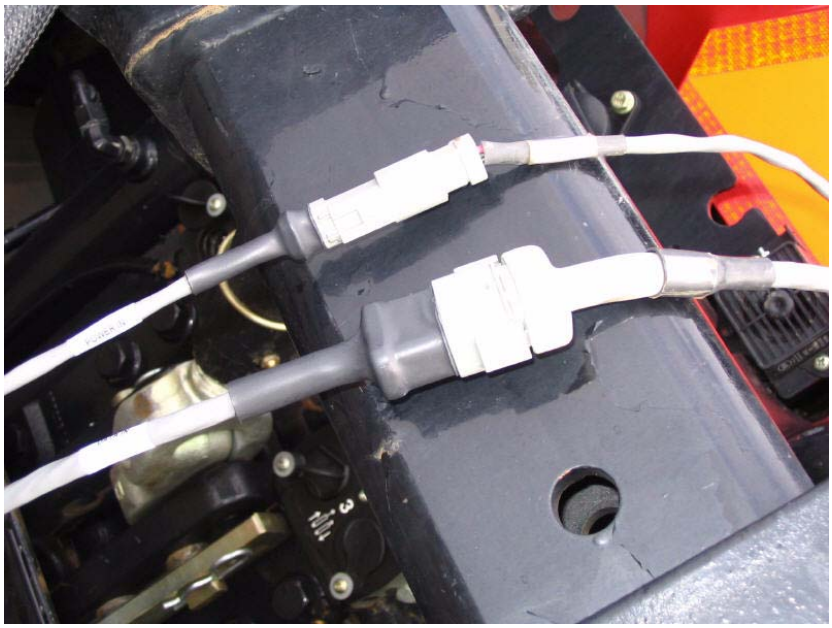
Figure 6-11 Routing the Cable into the Cab (SPX-3320 and SPX-3330 cabs)



SA Module Harness

1. Connect the 12-pin data and 2-pin power connectors between the Main Cable Harness and the SA Module Harness. See *Figure 6-12*.

Figure 6-12 Main Cable Harness to SA Module Harness Connections



Power Supply Connection

The following sub-sections describe basic instructions for connecting the AutoSteer system to available vehicle power sources:

- *Cab Power Connection*
- *Battery Power Connection*

Note: Refer to your Display user manual before connecting the AutoSteer system to vehicle power.

The Main Cable Harness must be connected to a 3-pin 12V power source. Your Display user manual provides specific instructions for connecting power to the AutoSteer system and specifies the appropriate vehicle power source.

Cab Power Connection

1. Locate the cab console right-side 12V power outlet. See *Figure 6-13*.
2. Use this 12V accessory power connector if the Display user manual specifies connecting to power inside the cab and connect the power to the three-pin socket in the cab using the supplied adapter cable.

Figure 6-13 Power Outlet Inside Cab

Battery Power Connection

1. Locate the vehicle battery on the right-hand side of the cab behind the steps. See *Figure 6-14*.
2. Connect to the vehicle battery if the display manual specifies a direct battery connection.

Figure 6-14 Battery Location

Note: A battery cable is provided with the AutoSteer system when a direct battery connection is required.

Post-Installation Procedures and Information

The **Post-Installation Procedures and Information** chapter provides information in the following sections:

- *Create New Vehicle*
- *Calibration and Tuning Guidelines*

Once the entire AutoSteer system, including the Display and display harnesses, have been installed on the vehicle, the procedures and notes provided in this chapter must be followed to complete the installation and prepare the vehicle for full AutoSteer capabilities.

Create New Vehicle

Once the entire system has been installed, the operator must first create a new vehicle profile. This configures the system so the User display can properly communicate with the various sensors and components on the vehicle. Follow the procedure below to create a new vehicle.

1. Make sure the User display is not powered ON.
2. Start the vehicle and take it to a clear area (such as an open field) where it can be calibrated.
3. Power up the AutoSteer system.
4. Follow the instructions provided in the Display's user manual to create a new vehicle.

Calibration and Tuning Guidelines

Note: For optimal steering performance, the AutoSteer system must be fully calibrated and then tuned.

Final Hardware Installation Checklist

This **Final Checklist** chapter contains the verifications steps necessary after the installation of the AutoSteer system.

Note: The Final Hardware Installation Checklist is on the back of this page. Tear this page out of your manual and fill in the checklist after the installation. You should keep a copy of this checklist for future reference when servicing the vehicle.

Machine Model: _____ Year: _____ Serial #: _____

Customer Name: _____

Location/Address: _____

AutoSteer Installation Kit Part Number: _____

NOTES

_____

_____

_____

_____

_____

_____

Name of Installer: _____ Date: _____

System Installation Checklist

1. Wheel Angle Sensor installed and all fasteners are tight. (optional) ☐
2. Display Bracket installed and all fasteners are tight. ☐
3. Roof Rail is installed and all fasteners are tight. ☐
4. SA Module is installed and all fasteners are tight. ☐
5. All cable ends are connected. ☐
6. All cables are secured with cable ties. ☐

AutoSteer Performance Checklist

1. Complete AutoSteer system calibration. ☐
2. Complete AutoSteer system tuning. ☐
3. Check total Wheel Angle Sensor counts. (optional) ☐ Value_____
4. Line acquisition is satisfactory. ☐
5. On-line steering is satisfactory. ☐
6. Manual override (kick-out) is working. ☐
7. Steering speed from lock-to-lock is satisfactory. ☐ Value_____Sec.

Note: See the *Post-Installation Procedures and Information* chapter for additional information.